AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1.   (Currently amended)   A computer-implemented method employed within a network of application server instances having a cluster architecture, comprising:

registering a plurality of management beans (MBeans) with an MBean server, the MBean server providing the MBeans with access to manageable resources of application server instances within a cluster of application server instances, the manageable resources being monitored by the MBeans;

displaying a representation of [[a]] the plurality of management beans (MBeans) registered with [[an]] the MBean server on a graphical user interface of a computing device, the registered MBeans including monitor MBeans and runtime MBeans, the monitor MBeans retrieving monitoring data from the runtime MBeans and the runtime MBeans providing the monitoring data to the monitoring MBeans, wherein each of the displayed MBeans represents a manageable resource of an application server instance within [[a]] the cluster of application server instances[[,]]; each application server instance within the cluster of application server instances having

a group of server nodes configured with a redundant set of application logic and associated data, each server node within the group of server nodes having access to a central database associated with the cluster of application server instances, and

a dispatcher in communication with a central service associated with the cluster of application server instances, the central service having a

-2-

~~locking service and a messaging service, the locking service~~

~~enabling synchronization by disabling access to a portion of~~

~~configuration data and program code stored within the central~~

~~database, the messaging service enabling communication among~~

~~the groups of server nodes within each application server instance~~

~~within the cluster of application server instances using a message~~

~~passing protocol;~~

monitoring the manageable resources within the cluster, including the monitor MBean ~~receiving~~ ~~information~~ retrieving the monitoring data regarding the manageable resources within the cluster from the ~~plurality of~~ runtime MBeans ~~registered with the MBean server~~associated with the manageable resources;

selecting one of the plurality of MBeans displayed in the graphical user interface; and

accessing an attribute of the selected MBean with the graphical user interface to view the ~~received information~~ retrieved monitoring data regarding the manageable resource represented by the selected MBean.

2.   (Cancelled)

3.   (Previously presented)   The method of claim 1, wherein displaying the representation of the plurality of MBeans comprises:

displaying a representation of a plurality of hierarchically organized MBeans.

4.   (Original)   The method of claim 3, wherein displaying the representation of the plurality of hierarchically organized MBeans comprises:

displaying a representation of a plurality of MBeans organized as a tree structure

having a root node.

5.   (Previously presented)   The method of claim 4, wherein the root node is an

MBean representing the cluster of application server instances.

6.   (Currently amended) The method of claim 5, wherein the tree structure further

includes one or more server nodes depending from the root node, wherein each

depending server node is an MBean representing a corresponding one of the server nodes

configured with the redundant set of application logic and associated data in the group of

server nodes for an application server instance in the cluster, each application server

instance within the cluster of application server instances having

        a group of server nodes configured with a redundant set of application

        logic and associated data, each server node within the group of

        server nodes having access to a central database associated with

        the cluster of application server instances, and

         a dispatcher in communication with a central service associated with the

        cluster of application server instances, the central service having a

        locking service and a messaging service, the locking service

        enabling synchronization by disabling access to a portion of

        configuration data and program code stored within the central

        database, the messaging service enabling communication among

        the groups of server nodes within each application server instance

        within the cluster of application server instances using a message

        passing protocol.

-4-

7.   (Previously presented)   The method claim 6, wherein the tree structure further includes a kernel node depending from each of the one or more depending server nodes, wherein the kernel node is an MBean representing a kernel of the corresponding server node which the depending server node represents.

8.   (Previously presented)   The method of claim 6, wherein the tree structure further includes a library node depending from at least one of the one or more depending server nodes, wherein the library node is an MBean representing a library of the corresponding server node which the depending server node represents.

9.   (Previously presented)   The method of claim 6, wherein the tree structure further includes a service node depending from at least one of the one or more depending server nodes, wherein the service node is an MBean representing a service of the corresponding server node which the depending server node represents.

10.   (Original)   The method of claim 1, wherein identifying one of the plurality of displayed MBeans comprises:
       selecting one of the plurality of displayed MBeans with a pointing device.

11.   (Original)   The method of claim 1, wherein identifying one of the plurality of displayed MBeans comprises:
       selecting one of the plurality of displayed MBeans with a keyboard.

12.   (Original)   The method of claim 1, wherein accessing the attribute of the selected MBean with the graphical user interface comprises:
       accessing an attribute of an MBean representing a cluster manager of the network.

Application No. 10/814,915
Examiner Rashedul Hassan

Atty. Docket No. 6570P026
TC/A.U. 2179

13.   (Original)   The method of claim 12, wherein accessing the attribute of the selected MBean representing the cluster manager comprises:

accessing a queue size attribute of the MBean to determine a number of requests waiting in a queue.

14.   (Original)   The method of claim 1, further comprising:

invoking an operation of the selected MBean with the graphical user interface.

15.   (Currently amended)   An apparatus comprising:

a graphical user interface; and

a processor and logic executable thereon to

register a plurality of management beans (MBeans) with an MBean server, the MBean server providing the MBeans with access to manageable resources of application server instances within a cluster of application server instances, the manageable resources being monitored by the MBeans;

display a representation of [[a]] the plurality of management beans (MBeans) registered with [[an]] the MBean server on the graphical user interface, the registered MBeans including monitor MBeans and runtime MBeans, the monitor MBeans retrieving monitoring data from the runtime MBeans and the runtime MBeans providing the monitoring data to the monitoring MBeans, wherein each of the displayed MBeans represents a manageable resource within [[a]] the cluster of application server instances[[,]]; each application server instance within the cluster of application server instances having

a group of server nodes configured with a redundant set of application logic and associated data, each server node

-6-

Application No. 10/814,915
Examiner Rashedul Hassan

Atty. Docket No. 6570P026
TC/A.U. 2179

~~within the group of server nodes having access to a central database associated with the cluster of application server instances, and~~

~~a dispatcher in communication with a central service associated with the cluster of application server instances, the central service having a locking service and a messaging service, the locking service enabling synchronization by disabling access to a portion of configuration data and program code stored within the central database, the messaging service enabling communication among the groups of server nodes within each application server instance within the cluster of application server instances using a message passing protocol;~~

monitor the manageable resources within the cluster, including the monitor MBean ~~receiving information~~ retrieving the monitoring data regarding the manageable resources within the cluster from the ~~plurality of~~ runtime MBeans ~~registered with the MBean server~~ associated with the manageable resources;

select one of the plurality of MBeans displayed [[one]] on the graphical user interface; and

access an attribute of the selected MBean with the graphical user interface to view the ~~received information~~ retrieved monitoring data regarding the manageable resource represented by the selected MBean.

16.   (Cancelled)

Application No. 10/814,915
Examiner Rashedul Hassan

Atty. Docket No. 6570P026
TC/A.U. 2179

17.   (Previously presented)   The apparatus of claim 15, wherein the processor and

logic executable thereon to display the representation of the plurality of MBeans

registered with the MBean server further comprises a processor and logic executable

thereon to

    display a representation of a plurality of MBeans organized as a tree structure

having a root node.

18.   (Original)   The apparatus of claim 15, wherein the processor and logic

executable thereon to access the attribute of the selected MBean with the graphical user

interface further comprises a processor and logic executable thereon to

    access an attribute of an MBean representing a cluster manager of the network.

19.   (Original)   The apparatus of claim 15, wherein the processor and logic

executable thereon further comprises a processor and logic executable thereon to

    invoke an operation of the selected MBean with the graphical user interface.

20.   (Currently amended)   A system comprising:

    a means for registering a plurality of management beans (MBeans) with an

MBean server, the MBean server providing the MBeans with access to manageable

resources of application server instances within a cluster of application server instances,

the manageable resources being monitored by the MBeans;

    a means for displaying a representation of [[a]] the plurality of management beans

(MBeans) registered with [[an]] the MBean server, the registered MBeans including

monitor MBeans and runtime MBeans, the monitor MBeans retrieving monitoring data

from the runtime MBeans and the runtime MBeans providing the monitoring data to the

monitoring MBeans, wherein each of the displayed MBeans represents a manageable

Application No. 10/814,915
Examiner Rashedul Hassan

Atty. Docket No. 6570P026
TC/A.U. 2179

resource of an application server instance within [[a]] the cluster of application server instances[[,]]; ~~each application server instance within the cluster of application server instances having~~

> ~~a group of server nodes configured with a redundant set of application logic and associated data, each server node within the group of server nodes having access to a central database associated with the cluster of application server instances, and~~

> ~~a dispatcher in communication with a central service associated with the cluster of application server instances, the central service having a locking service and a messaging service, the locking service enabling synchronization by disabling access to a portion of configuration data and program code stored within the central database, the messaging service enabling communication among the groups of server nodes within each application server instance within the cluster of application server instances using a message passing protocol;~~

a means for monitoring the manageable resources within the cluster, including a monitor MBean means for ~~receiving information~~ retrieving the monitoring data regarding the manageable resources within the cluster from the ~~plurality of~~ runtime MBeans ~~registered with the MBean server~~ associated with the manageable resources;

a means for selecting one of the plurality of MBeans from the displayed representation of the plurality of MBeans; and

a means for accessing an attribute of the selected MBean from the displayed representation of the plurality of MBeans to view the ~~received information~~ retrieved monitoring data regarding the manageable resource represented by the selected MBean.

21.   (Cancelled)

22.   (Previously presented)   The system of claim 20, wherein the means for displaying the representation of the plurality of MBeans comprises:

a means for displaying a representation of a plurality of MBeans organized as a tree structure having a root node.

23.   (Previously presented)   The system of claim 20, wherein the means for accessing the attribute of the selected MBean comprises:

a means for accessing an attribute of an MBean representing a cluster manager of the network.

24.   (Previously presented)   The system of claim 23, further comprising:

a means for invoking an operation of the selected MBean.

25.   (Currently amended)   An article of manufacture comprising:

a computer-readable medium providing instructions that, when executed by an apparatus, cause the apparatus to

register a plurality of management beans (MBeans) with an MBean server, the MBean server providing the MBeans with access to manageable resources of application server instances within a cluster of application server instances, the manageable resources being monitored by the MBeans;

-10-

Application No. 10/814,915
Examiner Rashedul Hassan

Atty. Docket No. 6570P026
TC/A.U. 2179

display a representation of [[a]] the plurality of management beans (MBeans) registered with [[an]] the MBean server on a graphical user interface of a computing device, the registered MBeans including monitor MBeans and runtime MBeans, the monitor MBeans retrieving monitoring data from the runtime MBeans and the runtime MBeans providing the monitoring data to the monitoring MBeans, wherein each of the displayed MBeans represents a manageable resource of an application server instance within [[a]] the cluster of application server instances[[,]]; ~~each application server instance within the cluster of application server instances having~~

~~a group of server nodes configured with a redundant set of application logic and associated data, each server node within the group of server nodes having access to a central database associated with the cluster of application server instances, and~~

~~a dispatcher in communication with a central service associated with the cluster of application server instances, the central service having a locking service and a messaging service, the locking service enabling synchronization by disabling access to a portion of configuration data and program code stored within the central database, the messaging service enabling communication among the groups of server nodes within each application server instance within the cluster of application server instances using a message passing protocol;~~

monitor the manageable resources within the cluster, including the monitor MBean ~~receiving~~ ~~information~~ retrieving the monitoring data regarding the manageable resources within the cluster from the ~~plurality of~~ runtime MBeans ~~registered with the MBean server~~ associated with the manageable resources;

-11-

select one of the plurality of MBeans displayed in the graphical user interface; and

access an attribute of the selected MBean with the graphical user interface to view the ~~received information~~ retrieved monitoring data regarding the manageable resource represented by the selected MBean.

26.   (Cancelled)

27.   (Previously presented)   The article of manufacture of claim 25, wherein the instructions that, when executed by the apparatus, cause the apparatus to display the representation of the plurality of MBeans registered with an MBean server on the graphical user interface further cause the apparatus to

display a representation of a plurality of hierarchically organized MBeans.

28.   (Original)   The article of manufacture of claim 27, wherein the instructions that, when executed by the apparatus, cause the apparatus to display the representation of the plurality of hierarchically organized MBeans further cause the apparatus to

display a representation of a plurality of MBeans organized as a tree structure having a root node.

29.   (Original)   The article of manufacture of claim 25, wherein the instructions that, when executed by the apparatus, cause the apparatus to access the attribute of the selected MBean with the graphical user interface further cause the apparatus to

access an attribute of an MBean representing a cluster manager of the network.

Application No. 10/814,915
Examiner Rashedul Hassan

Atty. Docket No. 6570P026
TC/A.U. 2179

30.   (Previously presented)   The article of manufacture of claim 25, wherein the computer-readable medium providing instructions that, when executed by an apparatus, further cause the apparatus to invoke an operation of the selected MBean with the graphical user interface.